

AMENDMENTS TO THE CLAIMS

1-49. (Canceled)

50. (Currently Amended) A method for using a sensor array configured to detect analytes in a fluid based on sensor shape, comprising:

- a) providing i) a plurality of sensing elements of a first density, each element comprising a different receptor coupled to a cured polymeric material, said cured polymeric material having a different, geometric shape, wherein the receptor is configured to produce a signal when the sensing element interacts with a specific analyte during use, thereby detecting analytes based on sensor shape; and ii) a liquid composition of a second density for forming a supporting member, said second density greater than said first density;
- b) randomly placing the sensing elements in a said liquid composition under conditions whereby the sensing elements float to the surface of the composition;
- c) curing said composition such that said sensing elements are randomly oriented on the surface of a cured supporting member;
- d) contacting said sensing elements on said cured supporting member with fluid comprising one or more analytes, and
- e) detecting the interaction of one or more receptors with one or more analytes based on sensor shape and not sensor location.

51-75. (Canceled)

76. (Previously Presented) A method of sensing multiple analytes in a fluid comprising:

providing a sensor array comprising a plurality of sensing elements at least partially embedded within a supporting member comprising a cured liquid composition, wherein each of the sensing elements comprises a receptor coupled to a polymeric body, and wherein the receptor is at least partially encapsulated within the polymeric body, and wherein the sensing elements are disposed on or

at an exterior surface of the cured liquid composition, and wherein a first portion of the sensing elements are configured to produce a signal in the presence of a first analyte and wherein a second portion of the sensing elements are configured to produce a signal in the presence of a second analyte, and wherein the first and second portions of the sensing elements have predetermined shapes, and wherein the shape of the first portion of the sensing elements is different from the shape of the second portion of the sensing elements;

passing a fluid over the sensor array, said fluid comprising multiple analytes;

monitoring a spectroscopic change of the sensing elements as the fluid is passed over the sensor array, wherein the spectroscopic change is caused by the interaction of the analyte with the sensing element;

and determining the shape of the sensing elements that undergo a spectroscopic change, rather than the location of said sensing elements.

77-98. (Canceled)

99. (Canceled)

100. (Previously Presented) The method of claim 50, wherein the polymeric material of the sensing element comprises a polymeric resin.

101. (Previously Presented) The method of claim 100, wherein the polymeric resin comprises a polyethylene glycol hydrogel resin.

102. (Canceled)

103. (Previously Presented) The method of claim 50, wherein the geometric shape is selected from the group consisting of crosses, squares and triangles.

104. (Previously Presented) The method of claim 101, wherein the polyethylene glycol hydrogel resin is cast in a liquid form and cured.

105. (Previously Presented) The method of claim 50, wherein the polymeric material comprises a polyethylene glycol diacrylate.

106. (Canceled)

107. (Canceled)

108. (Previously Presented) The method of claim 50, wherein the receptor comprises a nucleic acid.

109. (Previously Presented) The method of claim 76, wherein the sensing element comprises a polymer.

110. (Previously Presented) The method of claim 76, wherein the sensing element comprises a polyethylene glycol hydrogel.

111. (Previously Presented) The method of claim 76, wherein the receptor is configured to produce a signal when the sensing element interacts with the analyte during use.

112. (Canceled)

113. (Previously Presented) The method of claim 76, wherein the polymeric body comprises a geometric shape.

114. (Previously Presented) The method of claim 76, wherein the polymeric body comprises a polyethylene glycol polymer.

115. (Previously Presented) The method of claim 76, wherein the polymeric body comprises a polyethylene glycol diacrylate.

116. (Canceled)

117. (Canceled)

118. (Canceled)

119. (Previously Presented) The method of claim 50, wherein the plurality of sensing elements are formed by mixing a receptor in a monomer composition, and curing the mixture into a geometric shape.

120. (Previously Presented) The method of claim 76, wherein the plurality of sensing elements having a geometric shape are formed by the method comprising: forming a mixture of a receptor in a monomer composition, and curing the mixture into a geometric shape.

121. (Previously Presented) The method of Claim 119, wherein said curing comprises light curing.

122. (Previously Presented) The method of Claim 120, wherein said curing comprises light curing.